

- PRESS RELEASE -

CST MICROWAVE STUDIO 2011

Curved Finite Elements now also for the Eigenmode Solver

June 7, 2011, Baltimore, MD, Computer Simulation Technology (CST) announces the introduction of a finite element based eigenmode solver in CST MICROWAVE STUDIO® version 2011 SP3, at IMS 2011 booth #1423.

The computation of eigenmodes is essential for the accurate design of resonant structures, such as cavities, filters or particle accelerators. Typical results of these simulations are resonance frequencies and Q-values. An additional application area of eigenmode solvers is the design of periodic devices, such as slow-wave structures (e.g. travelling wave tubes) and metamaterials, where phase-diagrams can be derived from unit cells.

One of the main challenges in the design of cavity resonators is the precise representation of the simulation model's actual geometry. This is required for the computation of eigenfrequencies, as well as the calculation of surface currents, which are necessary to evaluate the losses in the cavity.

Alongside the Finite Integration Technique (FIT) based eigenmode solver, CST MICROWAVE STUDIO® (CST MWS) version 2011 now features an alternative Eigenmode solver which uses the Finite Element Method (FEM). The new eigenmode solver features curved elements of arbitrary order, with which users of the general purpose CST MWS FEM frequency domain solver will already be familiar. These elements enable a conformal representation of the geometry which improves the simulation accuracy. In combination with the unstructured FEM grid, which can resolve small structure details very efficiently, it can increase the simulation performance dramatically.

"Eigenmode computation has a long tradition in CST, and we are proud to present this exciting new solver to our long standing customer base," stated Peter Thoma, Managing Director, R&D, CST. "The introduction of curved elements, in combination with the accuracy enhancing True Geometry Approximation, represented a major technological step forward for the CST MWS FEM frequency domain solver. The performance increase through curved element FEM applied to eigenmode calculation is extraordinary in our test cases."

Availability

The new CST MWS eigenmode solver is released with service pack 3 of CST MICROWAVE STUDIO 2011. It is now available for download to customers with valid maintenance contract for the eigenmode solver.

About CST

CST develops and markets high performance software for the simulation of electromagnetic fields in all frequency bands. Its success is based on the implementation of unique, leading edge technology in a user-friendly interface. CST's customers operate in industries as diverse as Telecommunications, Defense, Automotive, Electronics, and Medical Equipment, and include market leaders such as IBM, Intel, Mitsubishi, Samsung, and Siemens. With 180 employees worldwide and a network of qualified distributors, over 220 people are dedicated to the development and support of its EM products in more than 30 countries. CST's flagship product, CST MICROWAVE STUDIO® (CST MWS) is the market leader in Time Domain simulation. It enables the fast and accurate analysis of high frequency devices such as antennas, filters, couplers, planar and multi-layer structures and SI and EMC effects. CST MWS can offer considerable product to market advantages such as shorter development cycles, virtual prototyping before physical trials, and optimization instead of experimentation.

Further information about CST is available on the web at <http://www.cst.com>.

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